

REMARKS

Reconsideration is respectfully requested.

Claims 38 through 43 and 46 through 66 remain in this application. Claims 1 through 37, 44, and 45 have been cancelled. No claims have been withdrawn. Claim 67 has been added.

Paragraphs 2 through 4 of the Office Action

Claims 38 through 43 and 46 through 66 have been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Harris in view of Valdespino.

In the final Office Action, it is contended in the Response to Arguments section that (the Examiner's characterization of the applicant's arguments have been omitted for the sake of brevity):

In response to applicant's argument regarding KSR, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the examiner contends that one of ordinary skill in the art would recognize that if a shock absorber air bag is exposed to the environment, it would be in need of some sort of encasement or enclosure to protect it from damage. Thus, contrary to applicant's remarks, this problem addressed by the obviousness rejection is one which is "known in the art", "at the time of the invention", and due to the nature of the structure of the air bag of the Harris reference, would be "addressed by the patent".

Assuming for the purposes of this response only that the Examiner's characterization of the applicable law is correct, it is submitted that the Examiner has not established that the "knowledge" set forth in this portion of the Office Action is actually known to those skilled in the art. More specifically, the Office Action states that "the examiner contends that one

of ordinary skill in the art would recognize that if a shock absorber air bag is exposed to the environment, it would be in need of some sort of encasement or enclosure to protect it from damage”, but does not provide any evidence (other than the contention itself) that this is actually known to one of ordinary skill in the art. Moreover, and perhaps more importantly, the while the Examiner asserts that there is a “need” for encasement of an exposed air bag, clearly one of ordinary skill in the art recognizes that there are numerous applications of air bags that are exposed and not in need of encasement. Air bladders are used in truck suspensions without such encasement, and function just fine without that protection. Additionally, and this point will be discussed in greater detail below, even if one of ordinary skill in the art recognizes this alleged “need”, would the skilled person abandon the desired functionality of the Harris airspring to try to meet this perceived “need” for encasement? It is submitted that one of ordinary skill in the art would not.

It is further asserted in the Response to Arguments section that:

Further, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

It is submitted that the requirement for providing some evidence that the art recognizes the problem alleged to be solved is for the purpose of showing that the combination is merely based upon hindsight. In other words, if the Examiner can show by evidence (and not merely by contention) that the art recognized the problem, then it is more probable that the combination did not arise from hindsight reconstruction—that the “problem” did not simply arise from looking at the invention and the art and devising a reason to combine. In any event, this still does not overcome the fact that the

allegedly obvious combination would defeat the function of the Harris patent, which will be discussed below.

The Response to Arguments further contends that:

In response to this, the examiner is merely relying upon her knowledge of the shock absorber art to formulate her rejections. Contrary to applicant's remarks, the examiner's obviousness modification isn't without merit. The examiner contends that the problem being addressed by the asserted combination (i.e., completely enclosing the air bag within the housing) is a "problem that is addressed" by the Harris patent. Harris' air bag 30 is not completely enclosed within the housing 40 and in light of Valdespino's teachings, one of ordinary skill in the art would glean that fully enclosing the air bag within a shock absorber housing would protect the air bag from damage incurred from its operating environment. The air bag of Harris would be susceptible to potential puncture or wear from factors such as road spray and debris and this would be a problem that could be addressed by the patent, if for no other reason, due to the structural arrangement of the Harris air bag. Therefore, the examiner maintains the problem being addressed by the asserted combination of references is a concern to the art being relied upon.

However, reliance upon personal knowledge of a "need" that is not expressed in the art is problematic, as it does not alleviate the suspicion of hindsight reconstruction as simply providing some evidence in the art that the art recognized such a problem. The statement that that "examiner contends that the problem being addressed by the asserted combination (i.e., completely enclosing the air bag within the housing) is a "problem that is addressed" by the Harris patent" is confusing, as it does not appear that the partial restraining sleeve of Harris is used for any protection purpose, and furthermore the Harris patent explicitly identifies the actual purpose for the partial restraining sleeve (e.g., deflection). It should be pointed out here that although it is argued that the Valdespino patent shows "fully enclosing the air bag", Valdespino does not recognize the damage or puncture "problem" that is set forth in great detail here, nor does Valdespino teach that its casing (13) structure is a solution to this "problem" (or any other problem, for that matter. Moreover, simply because the Examiner,

apparently acting as "one of ordinary skill in the art", has a concern about the protection of the flexible member of Harris does not establish that the "problem" was "a concern to the art being relied upon".

The Response to Arguments section further contends that:

Applicant next argues that one of ordinary skill in the art does not abandon the known solution that counteracts and prevents known problems that are explicitly addressed in the patent to solve a problem that is not even recognized in either of the documents of the combination.

In response to this, the examiner is not abandoning the known solution of the air bag 30 of Harris, but rather improving upon the air bag structure itself in light of the teachings of Valdespino. The fact remains that while the Harris patent may not expressly describe the need for a fully encapsulated air bag, this doesn't preclude the teachings of Valdespino of such an assembly from teaching such to one of ordinary skill in the art. This problem addressed in the obviousness modification, while not expressly discussed in the patents themselves, is not beyond the realm of one of ordinary skill in the art to recognize. Contamination of a shock absorber air bag such as Harris' is a fact and is something usually of concern in shock absorber design. So again, while this problem addressed in the combination is not stated in the references, it doesn't mean that the problem would not exist.

Although the Examiner contends that the proposed combination does not "abandon the known solution" of Harris to the problem that Harris explicitly addresses, the line of argument in the Office Action has yet to explain how the allegedly obvious modification of the Harris airspring does not destroy its ability to meet the stated object of providing "a suspension strut utilizing an airspring which generates *side load* compensating force" (Harris at col. 1, lines 40 et seq.). Clearly, one of ordinary skill in the art would recognize that attempting to apply the allegedly obvious modification to Harris would defeat the object stated in the Harris patent.

The Response to Arguments further states:

Applicant next argues that there is nothing in the Harris patent that states that a purpose of the partial restraining sleeve is to "shield

and protect" the flexible member, so the Valdespino casing does not disclose an alternative means to better shield and protect the air bag.

In response to this, again, the examiner contends that the structural teachings of the Valdespino reference in encasing the air bag within the housing would motivate one of ordinary skill in the art, when apprised of the Harris patent, to better protect the air bag from the harmful effects of the shock absorber operating environment. And while applicant is correct that the Harris patent does not make mention of his partial restraining sleeve shielding and protecting the flexible member present there, the fact remains that the sleeve would perform this function merely due to the nature of its construction. Therefore, since the Valdespino reference discloses a similar type of shock absorber assembly to that of Harris, the examiner maintains that the combination is still valid.

The assertion that "the structural teachings of the Valdespino reference in encasing the air bag within the housing would motivate one of ordinary skill in the art" is submitted to be incorrect that the structure itself does not "motivate" one of ordinary skill in the art to make a modification, but is instead motivated by attempting to solve a problem—a problem that one is aware of—without causing further problems by making modifications that undo the solutions set forth by the art. Here, it is submitted that the Examiner urges that one of ordinary skill in the art would attempt to solve an unstated and unsubstantiated problem while eliminating the benefit of the Harris airspring.

Finally, the Response states:

Next, applicant argues that the proposed modification of Harris with the selected feature of Valdespino eliminates the primary benefit of the Harris teaching (i.e., the creation of a "side acting force by use of a partial restraining sleeve that extends less than half way around the circumference of the air spring flexible member) for an alleged benefit that is not even mentioned in Valdespino. Applicant contends that nothing in the Valdespino patent suggests that there is a need to better shield and protect the bladder shown in Valdespino as alleged in the rejection. Applicant then surmises that an alleged alternative that eliminates the primary benefit expressed in the Harris patent is not a desirable or obvious alternative. Thusly, applicant concludes that modifying the Harris patent to include a housing member which completely encompasses the flexible member (as the examiner stated the Valdespino reference teaches) would eliminate this side acting

force and would then teach away from the modification and thus completely eliminate the primary objection of the Harris patent.

In response to this, the examiner contends that the Valdespino reference is merely being relied upon to show that completely enclosing an air bag assembly within a housing is known and would provide an effective means of sealing the air bag from the environment. While the examiner recognizes that the Harris patent designs his restraining sleeve to create a side acting force, the teachings of Valdespino would merely lead one of ordinary skill in the art to the conclusion that completely enclosing the air bag is a possibility and would protect the air bag assembly from dirt, debris, and other such contaminants. Contrary to applicant's remarks, the examiner does not conclude that the Valdespino reference would teach away from the objective of the Harris patent, but instead provide an alternative means to better shield and protect the air bag.

Again, it is submitted that the Examiner never explains why the allegedly obvious modification would not destroy the function of the Harris airspring, even if one was for some reason motivated to "protect" the flexible member of the Harris airspring. Further, it is not argued that the Valdespino patent teaches against such a combination, but the object and purpose of the Harris patent teaches against such a combination due to the fact that these objects could not be accomplished with the allegedly obvious modification, and the rejections have never established or even attempted to explain how the Harris airspring could be modified as suggested in the rejections and still meet the object of the Harris patent.

In greater detail, as previously noted, claim 38 requires, in part, "wherein the housing completely encloses the air-bag". Claim 46 includes the requirement of "wherein the housing abuts against substantially an entire circumference of the air-bag". Claim 47 requires in part "wherein the housing extends along and about an entire extended length of the air-bag".

It is submitted that one of ordinary skill in the art, considering the discussion in the Harris patent, would not be led to modify the Harris apparatus in the manner alleged to be obvious in the rejection. More specifically, Harris states in its Abstract that (emphasis added):

A vehicle suspension strut incorporating an airspring around a hydraulic shock absorber is disclosed. The unique airspring design and orientation relative to the shock absorber axis creates a side acting force which counteracts the bending torque acting on the strut during operation in a vehicle and prevents binding of the shock absorber piston. The horizontal side load is achieved using a partial restraining sleeve which circumferentially shrouds the flexible member of the airspring. The partial restraining sleeve extends less than half way around the circumference of the airspring flexible member and has a radius less than the fully inflated radius of the flexible member therby creating a restraining force on only one side of the flexible member of the airspring.

Thus, it is clear to one of ordinary skill in the art from the Abstract of Harris that the key function of the apparatus is the creation of a "side acting force", and also that the key to creating this sideacting force is a "*partial restraining sleeve*" that "*extends less than half way around the circumference of the air spring flexible member*". It is submitted that this explicit discussion of the Harris patent would not lead one of ordinary skill in the art to the allegedly obvious modification of the Harris patent, and in fact teaches against any attempt to modify the Harris sleeve to adopt the housing of Valdespino patent, or any attempt to "completely enclose" the flexible member of Harris, as this would eliminate the "side acting force" that is the center of the Harris apparatus. Further, Harris states at col. 1, lines 40 through 64 that (all emphasis added):

The *object* of this invention is to provide a suspension strut utilizing an airspring which generates *side load compensating force*. The force counteracts the bending torque created by the mass of the vehicle in operation and minimizes stiction in the hydraulic damper of the strut. This yields a softer ride. The airspring gives the ability to achieve variable spring rates as well as a constant vehicle height maintainable regardless of load by adjusting the internal pressure of the airspring portion of the strut. The *side load compensating force* is achieved by utilizing a *partial restraining sleeve* which *restricts the radial expansion of the flexible member of the airspring around a limited portion of the circumference of the airspring*. The partial restraining sleeve is positioned diametrically opposite to the line of action desired for the side load compensating force. The point of contact of the partial restraining sleeve to the flexible member is at a lesser distance from the strut axis than the unrestrained inflated radius

of the flexible member of the airspring. This restraint of the flexible member on only a portion of its circumference creates a side load compensating force on the airspring portion of the strut thereby providing the ability to offset the bending torque exerted by the sprung mass of the vehicle in which the suspension strut is mounted.

It is submitted that this statement in the Harris patent that creation of the side load force is *the object* of the Harris system could only lead one of ordinary skill in the art away from the allegedly obvious modification set forth in the rejection. "Completely enclosing" the flexible member of the airspring, as it is alleged in the rejection that Valdespino teaches, would completely eliminate this primary objective of the Harris patent and its airspring. Harris includes other statements along these lines that will not be further discussed for the sake of brevity.

It is well established in the patent law that a proposed modification is not considered to be "obvious" if it renders the prior art structure unsuitable for its intended purpose. See MPEP §2143.01(V), where it is stated that:

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

It is submitted that any attempt to "completely enclose" the flexible member of Harris using the housing of Valdespino would eliminate the side acting force of the Harris structure (as the "side load" would be applied to all sides of the flexible member) and thus the eccentric loading of the flexible member achieved by the partial sleeve would be lost.

Further, it is noted that even the embodiment shown in Figure 4 of the Harris patent is discussed with a gap between a portion of the "can 71" and the flexible member 56. See, e.g., Harris at col. 6, lines 13 through 33 (emphasis added):

FIG. 4 is identical in all respects to FIG. 3 except that the detachable volume can 71 includes around its full circumference an annular volumetric cavity 76 around the flexible member 56. The volume can in this embodiment serves as a full circumference restraining cylinder and yet is detachable to change the effective volume of the internal working cavity 58 of the airspring. It is to be noted that the volume can may preferably be oval or oblong in radial cross sectional shape such that the restrained radius 80 is less than the unrestrained radius 82 where both radii are measured from the centerline 62. Thus the unrestrained radius 82 is equal to or greater than the inflated radius 84 of the flexible member 56, while the restrained radius 80 is less than the inflated radius 84 of the flexible member 56. This configuration yields a side load force F normal to the center of the contact area 86 between the flexible member 56 and the restraining radius side 90 of the volume can 71. This side 90 serves as a partial restraining sleeve as described in other embodiments.

Indeed, it is submitted that the partial restraint--which is the primary and singular thrust of the Harris patent--could only lead one of ordinary skill in the art away from the modification of the Harris apparatus that is proposed in the rejection of the Office Action.

It is therefore submitted that the cited patents, and especially the allegedly obvious combination of Harris and Valdispino set forth in the rejection of the Office Action, would not lead one skilled in the art to the applicant's invention as required by claims 38, 46 and 47.

Withdrawal of the §103(a) rejection of claims 38 through 43 and 46 through 66 is therefore respectfully requested.

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CONCLUSION

In light of the foregoing amendments and remarks, early reconsideration and allowance of this application are most courteously solicited.

Respectfully submitted,

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